



*G'nium**

The newsletter of the Washington Butterfly Association

P.O. Box 31317 Seattle WA 98103
www.naba.org/chapters/nabaws

*G'nium is the official greeting of WBA. It is derived from the name of common Washington butterfly food plants, of the genus *Eriogonum*.



Lunch break at Sheep Lake. Photo by Regina Johnson.

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Upcoming Program

December 5th: Monarchs in the Pacific Northwest and Beyond with Dr. Robert Pyle

Where do Washington and Oregon's Monarch butterflies come from...and where do they go? Why have we had so few in recent years, and can we do anything to encourage more? What effects have Monarch releases had on our understanding of their natural distribution and migration, both historically and in modern times? Bob will share our current state of knowledge about our region's Monarchs, and their relationship to the larger phenomenon in both California and Mexico. Come learn how the erroneous "Berlin Wall" model of North American monarchs arose in the first place, how studies in the Pacific Northwest helped to bring it down, and what has come to replace it as we get to know our Monarchs better. Of course, we will also learn about and view remarkable photographs of the amazing Monarch winter masses in Mexico, for those who have enjoyed or someday hope to visit this grand spectacle.

Wintering Monarchs on *Echium candicans* (Pride of Madeira) in Big Sur. Photo by Regina Johnson.



Recent Programs

In August, Merrill Peterson and Lars Crabo demonstrated their new website PNWMoths (<http://pnwmoths.biol.wvu.edu/>) , showing how it can be used not only for identification but for data mining and other purposes. Their discussion covered the people, resources and nuts and bolts that went into creating the site.

Then in October, Dave Nunnallee reviewed the many species of buckwheats in Washington and the butterflies that use them, especially the buckwheat blues, with many species of buckwheat hosting the larvae of just one species of blue, some of them not yet clearly identified and named.

In November David Droppers tackled the huge topic of “Lepidoptera Research Techniques,” showing count methods to estimate both actual numbers as well as trends, then showing traps, pheromones, and other baits, with light traps especially useful for moths. Since host plants are totally unknown for many species, especially moths, literally “beating the bushes” to collect larvae can expand our knowledge.

Book Sale prior to December 5th WBA meeting

Help support Washington Butterfly Assoc...our only fundraiser!

Sale begins at 6:00 for WBA members and open to general public at 6:15:

There are two elements of the WBA book sale:

First is nearly two hundred excellent nature related books which have been donated to WBA and sold at phenomenally low prices. (You may donate books to this sale at the meeting.) One hundred percent of these profits go directly to WBA. Included in this selection are many field guides of butterflies, plants, birds, mammals, general nature. Nature and scientific books, picture books, children's books, and many others will make wonderful personal acquisitions and/or holiday gifts.

The other element of the book sale benefits members in providing an opportunity to sell their own nature related books at any price they wish. Tables will be available for you to price and sell your own books. Rid yourself of books you no longer use and buy from others...books to replace them or as holiday gifts. It is suggested that a minimum of 20% of your sales be donated to WBA. Everyone wins!!!

Winter Party, January 26 2013

After many years at the home of Jonathan and Elizabeth Pelham, our winter party this year will be at the home of Bill & Heidi Weber (Jonathan's sister), 24005 52nd Ave W, Mountlake Terrace. It will follow our tradition of being a potluck built around a smoked turkey. Please bring a dish to share as well as a wrapped “white elephant” gift (suggested value \$5 or so) related to butterflies or nature.

Miscellaneous

Outreach

On September 16, we participated in the Burke Museum's annual Bug Blast, with many youngsters and their parents coming by our exhibit. WBA member Louise Kulzer worked with the Washington Native Plant Society to paint faces with butterflies and other designs.

On October 10, David Nunnallee traveled to Tacoma and the South Sound chapter of the WA Native Plant Society, where he gave a presentation on Butterflies and Native Plants. Of course there were many many gorgeous photos of butterflies on their host and nectar plants. Unfortunately many of the sites where the photos were taken burned this summer. The meeting was well attended by an appreciative audience, with lots of questions for David.

On November 3 Al Wagar worked in Discovery Park with Park Steward David St. John and nine Discovery Corps teenagers from the Pacific Science Center to improve butterfly habitat, removing exotic grasses and seeding with wildflowers that will serve as both hosts for larvae and nectar sources. The grasses were apparently planted to feed the horses during the early days of the former Fort Lawton. Some other WBA members hoped to participate but had commitments they couldn't duck.

WBA Noticeline

This is a special service to WBA members. Notices are sent out to members reminding them of upcoming meetings, special announcements and copies of interesting butterfly research articles. We make every effort to not overuse this communication and all addresses are blind. If you are interested in receiving this service...just send your name and e-mail address to: wabutterflyassoc@earthlink.net and indicate: Add Noticeline

Last Trip Report of 2012

Sheep Lake: On September 1, an eager group of butterflyers headed out to Sheep Lake on the Pacific Crest Trail just outside of Mt. Rainier National Park. The air was quite cool, but it warmed as well as we did on the sun-drenched trail. Our enthusiastic leader, Bob Hardwick, was on the hillside netting a butterfly almost immediately. It was about two miles to the lake basin. We saw several species along the way including a Blue Copper, an Arctic Fritillary, and a stunning Red Admirable, new to a few of us. The lake basin is surrounded by meadows that rise to high rock faces. We relaxed for lunch, roamed the meadows, and one brave soul went swimming in the lake! Bob noted that the butterflies were not as abundant as in the past, but we kept busy netting additional species including the Great Arctic, the Mariposa Copper, the Boisduval's Blue. The Great Arctic is found along the dry stream bed each year (odd and even years). Great Arctics are generally seen in even years, so this is an unusual population. We had a close up view of both the Hoary Comma and the Green Comma for comparison. In all, we saw 14 species! We left this beautiful area thinking it would be good to revisit Sheep Lake next year!

Melanie Weiss



Green comma. Photo by Bob Hardwick



David Droppers using a beating sheet to sample for bugs at Hansen Creek. Photo by Lauren Rich.



MJ Benevente is ready for action on the Sheep Lake trip. Photo by Regina Johnson.

Watching Washington Butterflies with Bob Pyle

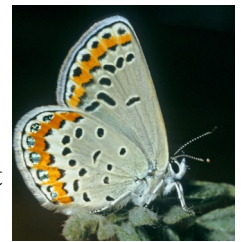
Number Eleven

Hide & Seek (Cryptic Species)

If you happened to open the next-to-latest number of the *Journal of the Lepidopterists' Society*, you will have found an extraordinarily thorough paper by Nick Grishin and Chris Durden, describing a brand new species of butterfly: *Strymon solitario*, the Big Bend Scrub Hairstreak. For years, various collectors had suspected there was something different about certain populations that had generally been confused with another, more widespread hairstreak. Investigating the situation in detail, Grishin and Durden found that these Texan butterflies did indeed differ—in ecology, host, range, and—very subtly—in physical makeup. Thus, a new species was born, at least in the systematic sense. It is not the only case of its kind.

In a recent conversation, I mentioned to a friend that new species of butterflies are still being discovered, even at this late date. "That's amazing!" she said. "I thought that with birds and butterflies, it had all been done. But it sounds as if you don't even have a solid foundation yet."

Actually, as I went on to explain, we do have a solid foundation for our science. Between the Pelham *Catalogue*, butterfliesofamerica.com, relatively recent books on the butterflies of British Columbia, Oregon, and Cascadia, and now what I refer to as "Cascadian Cats"—that is, *Life Histories of Cascadian Butterflies* by Nunnallee and James—we have a firm basis indeed for our regional butterfly studies. Indeed, that is what enables us to pick out new species that have not heretofore been obvious: what are known as "cryptic," or hidden, species.



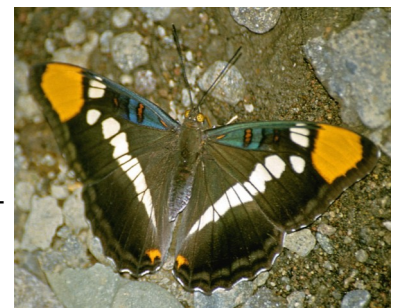
Melissa blue, David Nunnallee

A cryptic species is a kind of organism that looks so much like another, known type that it literally remains secreted in the background—or foreground—of the faunistic picture. Cryptic species breed true, in spite of being almost identical to others that may fly in the same time and space. That is, they have achieved genetic isolation without diverging very much in appearance from their sibling relatives. As such, they can be extremely difficult to discern, let alone to demonstrate, as discrete biological species. Eventually, reliable field marks may reveal themselves. In the meantime, most of us feel as though we just have to take the word of the cognoscenti, hoping that the kings have clothes. Yet, if we pay attention, it is usually not too difficult to understand why such distinctions are made, and to judge them for ourselves.

To be sure, some dramatic discoveries have been made in modern times that are wholly unique: the Sandia Hairstreak of the Southwest, found in a New Mexico 4-H collection in the late 'fifties; the Uncompahgre Fritillary, discovered by two graduate students hiking the high San Juan Mountains of southwest Colorado in 1979; and so on. But more likely to be uncovered in this day and age are species that have hitherto remained invisible against the matrix of other, often common, and look-alike kinds of butterflies.

Unlike such outright discoveries of unique new types, the detection and description of cryptic species requires painstaking observation on several levels: subtle clues of appearance, yes; but also ecology, life history, distribution, host plant fidelity, voltinism and phenology (number and timing of generations and development), and any other attributes you can think to watch and measure. Long specimen series are generally necessary for comparing variation in pattern and morphology. Genitalic dissections sometimes provide the tip-off, and nowadays, DNA sequencing becomes more and more important and revealing.

Good examples of early cryptic species can be found in the satyr genus *Lethe*. If you look at the Klots field guide (1951), only three species are recognized: the Pearly Eye, the Creole Pearly Eye, and the Eyed Brown. But by the time of the Kaufman field guide (2008), we find the Northern and Southern Pearly Eyes as well as the Creole; and the Appalachian Eyed Brown as well as the original: five species from three, all of which have subtle but consistent differences. Another fine example is Hessel's Hairstreak, described in 1950. Prior to that, it was conflated with the widespread and common Olive Hairstreak. Sid Hessel and others had long noted that certain "Olives" had a grainier texture to the scales below, and showed up only in certain areas and habitats. This steered them ultimately to the correct deduction that *Callophrys hesseli* feeds solely on white cedar in near-coastal eastern swamps, as opposed to *C.*



California sister, David Nunnallee

gryneus, which feeds on eastern redcedar over much of the East (and, as we now know, on various other junipers and cedars throughout much of the country).

In more recent years, some other species pairs or triplets have been created from what was long thought to be just one, e.g. the Eastern, Canadian, and Appalachian Tiger Swallowtails; the Eastern Black and Joan's Swallowtails; and the California and Arizona Sisters. In each case, perceptive and dedicated sleuthing succeeded in revealing reliable, if difficult, distinctions.

Sometimes, the task consists of sifting the genuine, genetically separate entities from a mass of variation once oversplit and more recently lumped together. The classic example here would be the greater fritillaries. Holland's *Butterfly Book* recognized 47 species of *Argynnis* in 1898. These names were later rationalized to the point where the dos Passos checklist of 1964 contained only thirteen species of *Speyeria*, as the genus was then called. Since then, one of the lumped entities (*hesperis*) has been re-elevated, and another (*carolae*) named, as full species. So fifteen American *Argynnis* (now in ascendancy again!) are currently recognized.

And this work goes on. The famous (and federally endangered) Karner Blue was believed to be a full species by everyone from Vladimir Nabokov (who described it as *Lycaeides melissa samuelis*, but became convinced of its distinctness) to the grandfather of its conservation, Robert Dirig. At last it has been accorded that status, after spending half a century-plus listed as a "mere" subspecies of the Melissa Blue. (For the even more famous (and extinct) Xerces Blue, things have gone the other way. Long considered a distinct species, it is now thought to have been a highly distinct subspecies of the Silvery Blue.) The newest cryptic species teased out of the American checklist has just landed on our doorstep in the latest issue of *The Bulletin of the Allyn Museum* # 163. John and Tom Emmel (who have long worked to bring order to the highly variable wood nymphs) and Sterling Mattoon have erected a brand new entity they've named *Cercyonis incognita*, which would translate as the "Nameless Wood Nymph." It is very similar to both the Dark and Great Basin Wood Nymphs (*C. oetus* and *C. sthenele*), but breeds true in crossing experiments with both. The fact that it drops its eggs (like *C. oetus*) instead of affixing them to the host grass (like *C. sthenele*) suggests that it is probably more closely related to the former. Habitat, range, and looks all figured in.



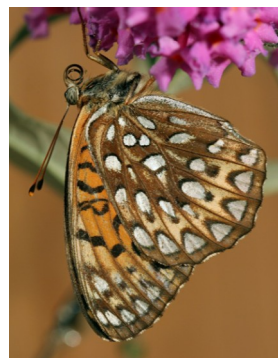
Great Basin wood nymph,

David Nunnallee

So where do we go from here? The parade of cryptic species is certainly not over. I suspect that the Red-spotted Purple will eventually be recognized as a distinct (but frequently hybridizing) species from the White Admiral, and that the eastern *Limenitis astyanax* may hive off its southwest cousin, *arizonensis*, as a sibling species. The Colorado Skipper has emerged from the Common Branded Skipper, and more of its "subspecies" may follow. Charles Remington once described *Papilio "gothica"* as a cryptic species separate from the Anise Swallowtail, and while this was not accepted, there may yet be another biological entity hidden within *P. zelicaon*. And there are bound to be other cryptids lurking deep within the meadows, fields, and checklists.

For me, the most exciting work of this sort going on in the Northwest today has to do with the dotted blues (*Euphilotes*) and scintillated blues (*Plebejus acmon/lupini* group). A closer look at these diminutive beauties and their (mostly) buckwheat hostplants is turning up much more diversity than we thought we had. *Watching Washington Butterflies* (1974) listed only three members of these genera, as recognized by Pyle and Pelham at that time in the state. After the research of Merrill Peterson, Andy Warren, David Nunnallee, David James, Paul Opler, and others, looking at insect/hostplant co-evolution, life histories, and many other aspects, that number is rising. It is likely to approach ten species before they are finished, and we may even have a truly endemic species, unique to Washington, in the Spangled Blue of the High Olympics.

We all like stability in our field guides and checklists, and sometimes changes can seem irritating, if not downright arbitrary. But the truth will out, and so it should. Butterflies have always been among the best and most beautiful canvases of evolution—for Darwin and Wallace, Bates and Beebe, Rothschild and Jordan, and all the other seers and seekers since. When a new cryptic species emerges from the tangle of life, it is yet another gift of diversity to those of us who care about such things. How exciting, that our state is such a living laboratory of biological understanding; and how exciting that butterflies have so much to teach us still.



Atlantis fritillary, David

Nunnallee



Plebejus lupini, David

Nunnallee

Species Profile: Brown Elfin (*Callophrys augustinus*)

by Dave Nunnallee



Elfins belong to the subfamily of butterflies called hairstreaks, which are placed in the worldwide family Lycaenidae which also includes blues, coppers and metalmarks. Many of the hairstreaks bear hairlike extensions at the rear of their hindwings, however the elfins have no such tails, instead bearing a “tornus”. This is a small rounded extension to the wing, projecting down perpendicular to the tails of other hairstreaks. Elfins are small, unobtrusive butterflies, colored in camouflaged browns and grays. All four of our elfins fly early in the spring, the Brown Elfin appearing as early as mid-March but with records through July at higher elevations.

Callophrys augustinus occurs throughout most of Canada, a bit of Alaska, and extending down both coasts of the US, to northernmost Mexico in the far West and to Georgia in the far East. While absent from most of the American Midwest and from the Gulf Coast states this is America's most widespread Elfin. Widespread in Washington, but absent from the Columbia Basin and generally from the higher west slopes of the Cascades, also absent from the NW part of the Olympic Peninsula.



In the spring adults lay their eggs on flower buds of the host plants; single eggs were observed being oviposited on salal at the base of the least developed bud at the tip of a flower cluster. On hatching the larvae feed first on the buds, then on flowers and finally on young fruits in succession as the host plant develops. The caterpillar is small, slug-like in appearance, attractively bright green with a yellow-green dorsal stripe and oblique lateral stripes and dashes. Brown Elfin larvae feed by extending their long necks down into a bud or fruit and then hollowing it out; an early instar may move its entire body into such a feeding hole. A number of food plants are eaten including Salal, huckleberry, Bearberry (Kinnikinnick), Ceanothus, Azalea, Arbutus and Labrador Tea. Pupation occurs in leaf litter near the base of the host plant and the pupa overwinters, ready to emerge early in the spring.



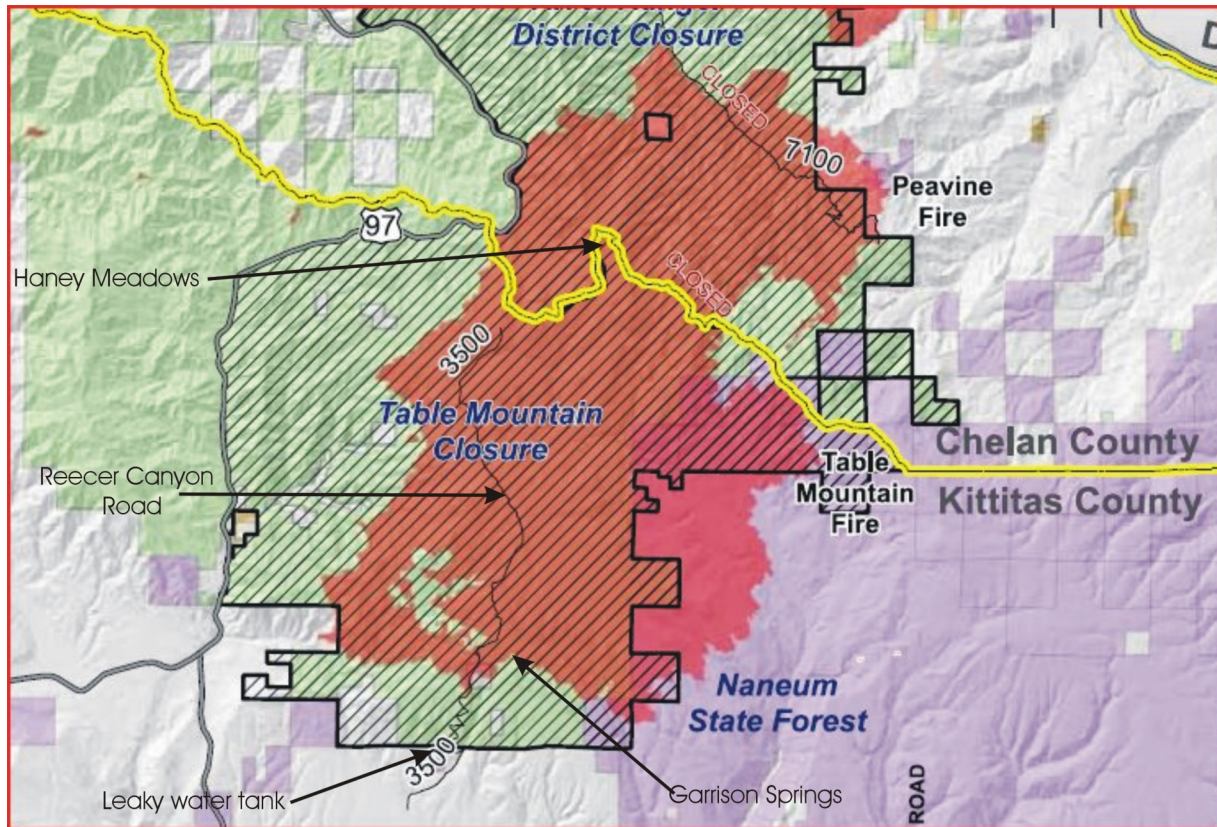
On eclosing in the spring Brown Elfins fly low and close to their host plants, in forest openings, power line rights-of-way, Christmas tree plantations and along forest roadsides. The males perch in conspicuous places and fly out to challenge any passing butterfly. Females are much less conspicuous, flying quietly from flower to flower to nectar, or carefully inspecting buds or new blossoms before depositing a single egg, then

moving on to another plant. Females will not oviposit if there is already an egg on the plant. Eggs can be found by watching the female's habits, then by checking nearby host plants with careful attention to the favored oviposition sites. All elfins perch with their wings together over their back, so dorsal wing surfaces can be observed only in the hand or in flight. A lepidopterist sampling the species early in the flight period is likely to find only males, and gravid females may not be present until up to two weeks later.

The Brown Elfin is marked with plain, 2-tone brown or reddish-brown colors, and fresh individuals often have a pleasant purplish cast. *Callophrys augustinus* can be differentiated from our other three species of elfins by its two-tone brown ventral hindwing; our other three species all have whitish or hoary markings to varying degrees, or strong zigzag lines in one species.



Table Mountain Fire 2012



This map of the Table Mountain Fire is taken from the Okanogan-Wenatchee National Forest website, at <http://www.fs.usda.gov/detail/okawen/news-events/?cid=STELPRDB5390910>. In this map, the burned area is shown in pink, while the closed areas are shown with hatchings. David Nunnallee's notations on the map show locations from WABA field trips.

This is the smoke plume from the Table Mtn. Fire as photographed on Sept. 19 by a member of the Wenatchee Valley Rappellers, Billy Turner.

<http://inciweb.org/incident/photograph/3269/17/>



President's Message from Richard Youel : WBA Annual Conference 2012

The Board has selected the Columbia River Gorge area for our next conference. This big spectacular area ranges all the way from the “wet” side to the “dry” side, with a lot of interesting options. You may remember that we did a conference there some years ago, with great trips going up toward Mt. Adams. This time, we are considering previous sites as well as completely new ones, especially at the eastern end - maybe the Goldendale area, with a chance to explore areas that are new to us?

We haven't settled for sure on the location and the date for the conference. If the dry side and lower elevation is the selection, the best butterflying would be in May or June. At this point we are thinking the first weekend in June may be the date. Our best field trip planners and venue investigators are working on it and, we'll give specific information as soon as we decide.

This should be a special conference for members from all parts of the state. You may want to extend your stay and explore more on your own. Stay tuned for more information!

Making the Conference Happen

Each year the Board of Directors is involved in the details of the conference; working with key people who do the investigations and make the recommendations that are the key to a great conference. The Board feels that this arrangement is probably not the best use of its time, and that it may not be the best at it anyway. So, Louise Kulzer, recently of the Board, suggested that we form a Conference Committee whose members could use their individual skills and interests to do the planning and execution, periodically checking in with the Board for direction and approval on key elements.

Louise has volunteered to be the first member of the Conference Committee. I will be the liaison to the Board. The main elements of planning a WBA conference are Field Trips (usually the first determinant for the general location and dates for the Conference), Venue (finding a place suitable for our meetings, with a good caterer and adequate accommodations), Registration (taking registrations and payments, keeping accurate records) and finally Execution (preparing name tags, programs and other stuff, and lining people up to do what needs to be done). You can see how different the tasks are, how different skills are needed and how it needs to happen at different times.

If this sounds interesting to you, please join the Conference Committee. We have done quite a few conferences and have a good idea of what it takes – so you won't have to invent anything. Most of the work can be done effectively by email. You will work with other nice people and no part of it will be overwhelming. We think you'll find it fun and satisfying. If you are willing to help, respond to Louise (tatooshtakto@gmail.com) or me (cryouel@msn.com).

Board Members

Richard Youel	President		
David Droppers	Vice President		
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Al Wagar	Treasurer		
Jon Pelham	Science Advisor		
Kim Kendall	At-Large		
Reg Reisenbichler	At-Large		
Melanie Weiss	At-Large		

Committees

Marty Hanson	Membership		
Joyce Bergen	Annual Conference		
David & Jo Nunnallee	Field Trips		
Idie Ulsh	Programs		
Carolyn Heberlein	Publicity/Website		
Regina Johnson	Newsletter		

Membership Application

Washington Butterfly Association

The Washington State Chapter of the
North American Butterfly Association (NABA)

Yes! I want to join WBA/NABA and receive *American Butterflies*, *Butterfly Garden News* and *WBA Newsletter*, as well as other member privileges.

Name: _____

Address: _____

City, State, Zip _____

Phone: _____ Email Address: _____

Special Interest (circle): Listing, Gardening, Observation, Photography, Conservation, and

Other _____

Dues enclosed (circle): Regular \$30 (\$60 outside U.S., Canada, Mexico)

Family \$40 (\$80 outside U.S., Canada, Mexico)

Payment must be in U.S. dollars.

Mail application form to: NABA, 4 Delaware Rd., Morristown, NJ 07960

Further information: wabutterflyassoc@earthlink.net or call Idie Ulsh at (206) 364-4935.